# WATER SUPPLY OUTLOOK FOR COLORADO AND NEW MEXICO



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

COLORADO STATE UNIVERSITY EXPERIMENT STATION
STATE ENGINEER of COLORADO
and STATE ENGINEER of NEW MEXICO

AS OF
**MAY 1, 1977**

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*COVER PHOTO: SNOW COURSE MEASUREMENTS BY A SURVEY TEAM IN UTAH'S WASATCH RANGE.*
ORC-254-10

## PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

| STATE | ADDRESS |
|---|---|
| Alaska | Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504 |
| Arizona | Room 3008, 6029 Federal Building, Phoenix, Arizona 85025 |
| Colorado (N. Mex.) | P. O. Box 17107, Denver, Colorado 80217 |
| Idaho | Room 345, 304 N. 8th. St., Boise, Idaho 83702 |
| Montana | P.O. Box 98, Bozeman, Montana 59715 |
| Nevada | P. O. Box 4850, Reno Nevada 89505 |
| Oregon | 1220 S.W. Third Ave., Portland, Oregon 97204 |
| Utah | 4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138 |
| Washington | 360 U.S. Court House, Spokane, Washington 99201 |
| Wyoming | P. O. Box 2440, Casper, Wyoming 82602 |

## PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia


USDA-SCS-PORTLAND, OR 1976

# WATER SUPPLY OUTLOOK FOR COLORADO AND NEW MEXICO

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

*Issued by*

R. M. DAVIS

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

*Released by*

ROBERT G. HALSTEAD

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
DENVER, COLORADO

ALBERT W. HAMELSTROM

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
ALBUQUERQUE, NEW MEXICO

*In Cooperation with*

JOHN PATRICK JORDAN

DIRECTOR
C S U
EXPERIMENT STATION

S. E. REYNOLDS

STATE ENGINEER
STATE OF NEW MEXICO

C. J. KUIPER

STATE ENGINEER
STATE OF COLORADO

*Report prepared by*

**JACK N. WASHICHEK, Snow Survey Supervisor**
**BERNARD A. SHAFER, Assistant Snow Survey Supervisor**
**JUDY R. TEILBORG, Statistical Assistant**

SOIL CONSERVATION SERVICE
SNOW SURVEY UNIT
P.O. BOX 17107
DENVER, COLORADO 80217

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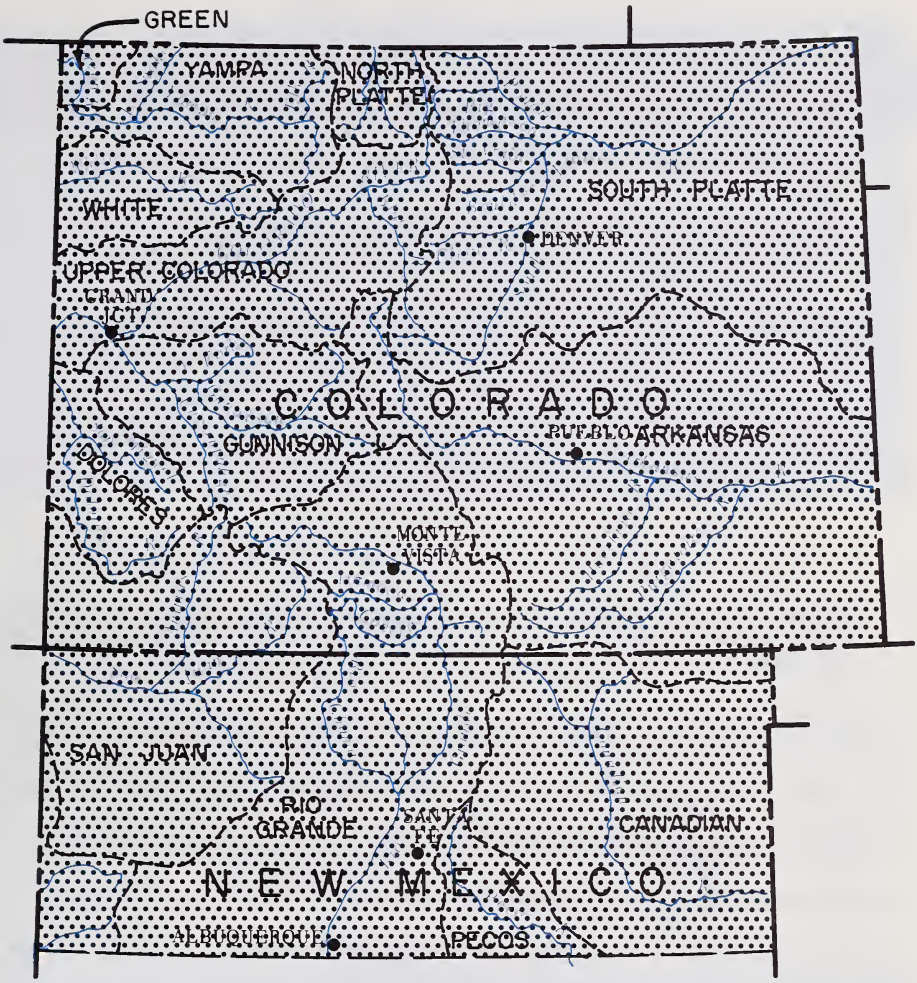
WATER SUPPLY OUTLOOK BY MAJOR WATERSHED AREAS

# WATER SUPPLY OUTLOOK

as of

MAY 1, 1977




The map on this page indicates the most probable water supply as of the date of this report. Estimates assume average conditions of snow fall, precipitation and other factors from this date to the end of the forecast period. As the season progresses accuracy of estimates improve. In addition to expected streamflow, reservoir storage, soil moisture in irrigated areas, and other factors are considered in estimating water supply. Estimates apply to irrigated areas along the main streams and may not indicate conditions on small tributaries.

# WATER SUPPLY CONDITIONS
## as of
MAY 1, 1977

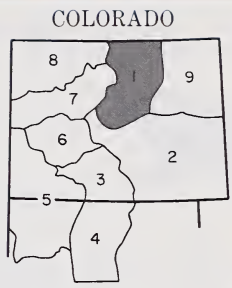
THE OUTLOOK FOR WATER SUPPLIES IN BOTH COLORADO AND NEW MEXICO REMAINS POOR. IN SOME BASINS THE FLOWS MAY BECOME CRITICAL ENOUGH TO WARRANT RATIONING FOR MUNICIPAL, RECREATIONAL AND INDUSTRIAL USE, IN ADDITION TO AGRICULTURE. AS A RESULT OF THE EXTREMELY DRY WINTER, MAJOR STREAMS WILL FLOW AT OR BELOW MINIMUM OF RECORD. MANY SPRINGS AND SMALL STREAMS WILL DRY UP ENTIRELY. MELTING OF THE MOUNTAIN SNOWPACK HAS PROGRESSED RAPIDLY IN MOST AREAS. PRECIPITATION DURING THE THIRD WEEK OF APRIL HELPED TO IMPROVE SOIL MOISTURE ALONG THE FRONT RANGE OF COLORADO AND SOUTH INTO NEW MEXICO.

COLORADO -- APRIL BROUGHT NO SIGNIFICANT RELIEF FROM THE IMPENDING WATER SHORTAGE DUE TO A POOR WINTER. THE CURRENT SNOWPACK IN THE MOUNTAINS REMAINS ANYWHERE FROM 30 TO 90 PERCENT BELOW THE NORM FOR THIS TIME OF YEAR. ALL THE LOW AND MUCH OF THE MIDDLE ELEVATION PACK HAS MELTED . WATER SUPPLY FORECASTS BASED ON AVERAGE PRECIPITATION YET TO COME ARE FOR RECORD LOW FLOWS ON NEARLY ALL STREAMS IN THE STATE. THE ONLY EXCEPTION IS FOR STREAMS WITH HEADWATERS IN THE SANGRE DE CRISTO RANGE WHICH SHOULD FLOW 80 PERCENT OF AVERAGE. RESERVOIR STORAGE IN MOST BASINS IS NEAR OR ABOVE AVERAGE.

NEW MEXICO -- NO SIGNIFICANT CHANGES IN WATER SUPPLIES ARE FORECAST FROM THE PREVIOUS APRIL REPORT. THE RIO GRANDE AND ITS MAJOR TRIBUTARIES ARE EXPECTED TO FLOW AT OR BELOW PREVIOUS MINIMUMS WHICH IS ABOUT 40 PERCENT OF NORMAL. STREAMS ORIGINATING IN THE SANGRE DE CRISTO RANGE SHOULD BE SLIGHTLY BETTER. STORMS DURING THE THIRD WEEK OF APRIL ADDED SOME SNOW TO HIGHER ELEVATIONS AND RAIN AT LOWER ELEVATIONS WHICH HELPED TO IMPROVE SOIL MOISTURE. WATER USERS WITH DIRECT DIVERSIONS WILL BE HURT THE MOST.

# WATER SUPPLY OUTLOOK
# FOR THE SOIL CONSERVATION DISTRICTS IN THE
# SOUTH PLATTE RIVER WATERSHED IN COLORADO
## as of
## MAY 1, 1977

**U. S. DEPARTMENT OF AGRICULTURE · SOIL CONSERVATION SERVICE**
**CSU EXPERIMENT STATION, STATE ENGINEERS OF COLORADO AND NEW MEXICO**


LEGEND

- Highway
- Drainage
- Town
- Watershed Boundary
- Generally Adequate — 100% or more
- Limited Shortage — 75%-100%
- Severe Shortage — 75% or less

## YOUR WATER SUPPLY

STREAMFLOW PROSPECTS WERE SLIGHTLY IMPROVED BY APRIL SNOWFALL, HOWEVER, FORECASTS ARE FAR BELOW NORMAL AND STILL NEAR THE MINIMUM OF RECORD. FORECASTS RANGE FROM 37% OF THE 15-YEAR AVERAGE ON THE ST. VRAIN TO 47% ON BOULDER CREEK. CARRYOVER STORAGE IS GOOD AND WILL PROVIDE ADDITIONAL WATER TO USERS UNDER A RESERVOIR SYSTEM. THOSE WATER USERS WITH DIRECT FLOW RIGHTS WILL HAVE VERY POOR SUPPLIES. RECENT RAINS HAVE IMPROVED SOIL MOISTURE.


*This report prepared by*

JACK N. WASHICHEK—BERNARD A. SHAFER
SNOW SURVEY UNIT, SOIL CONSERVATION SERVICE
DENVER, COLORADO

*Issued by*

ROBERT G. HALSTEAD—STATE CONSERVATIONIST
DENVER, COLORADO

ROGER A. HANSEN—AREA CONSERVATIONIST
LA JUNTA, COLORADO

U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE

RODNEY M. ALT—AREA CONSERVATIONIST
GREELEY, COLORADO

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April—September

| FORECAST POINT | FORE-CAST | % of Average | Average* |
|---|---|---|---|
| Big Thompson River at Drake (1) | 45 | 42 | 107 |
| Boulder Creek at Orodell | 23 | 47 | 49 |
| Cache La Poudre River at Canyon Mouth (2) | 110 | 45 | 247 |
| Clear Creek at Golden (3) | 55 | 43 | 127 |
| St. Vrain Creek at Lyons (4) | 30 | 40 | 75 |

*(1) Observed flow plus by-pass to power plants. (2) Observed flow minus trans-basin diversions plus municipal and irrigation diversions. (3) Observed flow minus diversion through August P. Gumlick Tunnel. (4) Observed flow plus change in storage in Price Reservoir.*

## WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

| STREAM or AREA | Flow Period | |
|---|---|---|
| | Spring Season | Late Season |
| Bear Creek | Poor | Poor |
| Coal Creek | Poor | Poor |
| North Fork of South Platte | Poor | Poor |
| North Fork of Cache La Poudre | Poor | Poor |
| Ralston Creek | Poor | Poor |
| Rock Creek | Poor | Poor |

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

| RIVER BASIN and/or SUB-WATERSHED | Number of Courses Averaged | THIS YEAR'S SNOW WATER AS PERCENT OF | |
|---|---|---|---|
| | | Last Year | Average * |
| Big Thompson | 5 | 38 | 31 |
| Boulder | 3 | 51 | 42 |
| Cache La Poudre | 7 | 44 | 44 |
| Clear Creek | 6 | 70 | 60 |
| Saint Vrain | 3 | 23 | 20 |
| South Platte | 3 | 55 | 49 |

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

| RESERVOIR | Usable Capacity | Usable Storage | | |
|---|---|---|---|---|
| | | This Year | Last Year | Average* |
| Antero | 33 | 16 | 16 | 14 |
| Barr Lake | 32 | 28 | 27 | 26 |
| Black Hollow | 8 | 4 | 5 | 4 |
| Boyd Lake | 44 | 34 | 40 | 38 |
| Cache La Poudre | 10 | 0 | 7 | 9 |
| Carter Lake | 109 | 106 | 106 | 99 |
| Chambers Lake | 9 | 1 | 3 | 4 |
| Cheesman | 79 | 34 | 43 | 60 |
| Cobb Lake | 34 | 5 | 15 | 15 |
| Eleven Mile | 98 | 90 | 98 | 89 |
| Fossil Creek | 12 | 10 | 9 | 8 |
| Gross | 43 | 23 | 14 | 23 |
| Halligan | 6 | 5 | 2 | 6 |
| Horsetooth | 144 | 99 | 126 | 121 |
| Lake Loveland | 14 | 9 | 9 | 10 |
| Lone Tree | 9 | 5 | 6 | 8 |
| Mariano | 5 | 5 | 5 | 5 |
| Marshall | 10 | 5 | – | 6 |
| Marston | 18 | 17 | 15 | 16 |
| Milton | 24 | 20 | 18 | 15 |
| Standley | 42 | 31 | – | 20 |
| Terry | 8 | 6 | 6 | 6 |
| Union | 13 | 13 | 11 | 10 |
| Windsor | 19 | 11 | 15 | 13 |

* 1958-1972 period.

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SNOW SURVEY UNIT
P.O. BOX 17107
DENVER, COLORADO 80217





*"The Conservation of Water begins with the Snow Survey"*

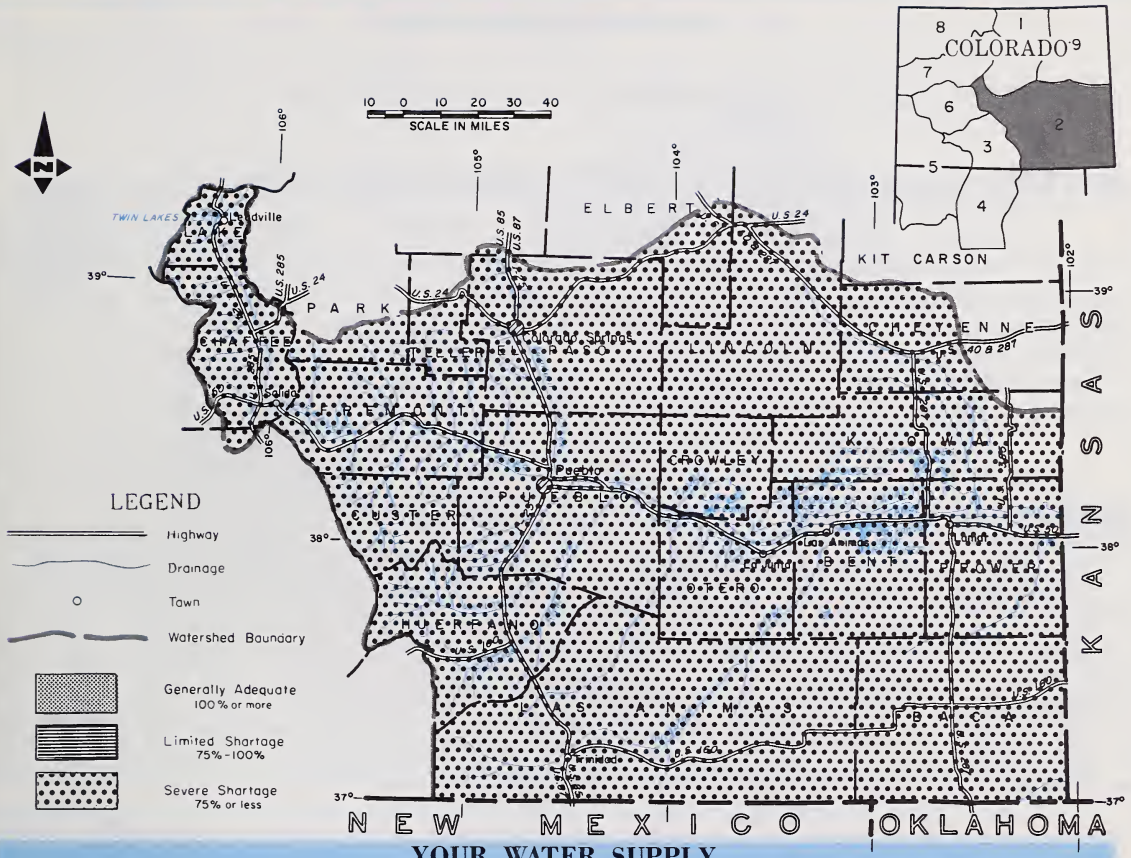
# WATER SUPPLY OUTLOOK
## FOR THE SOIL CONSERVATION DISTRICTS IN THE
# ARKANSAS RIVER WATERSHED IN COLORADO

as of

MAY 1, 1977

**U. S. DEPARTMENT OF AGRICULTURE · SOIL CONSERVATION SERVICE**

**CSU EXPERIMENT STATION, STATE ENGINEERS OF COLORADO AND NEW MEXICO**




## YOUR WATER SUPPLY

PROSPECTS FOR SUMMER STREAMFLOW ARE BLEAK EXCEPT FOR THE CUCHARAS DRAINAGE. FLOWS WILL BE AT OR BELOW PREVIOUS MINIMUMS. THE SNOWPACK MELTED RAPIDLY DURING APRIL, AND REMAINS 60 TO 70% BELOW NORMAL. SOME RAINFALL DURING APRIL HAS REPLENISHED SOIL MOISTURE BUT ONLY TO VERY SHALLOW DEPTHS. SUBSURFACE MOISTURE GENERALLY REMAINS POOR. CONTENTS OF RESERVOIRS ARE STILL WAY BELOW NORMAL AND WILL NOT AFFORD MUCH RELIEF TO WATER-SHORT AREAS.


*This report prepared by*

JACK N. WASHICHEK—BERNARD A. SHAFER
SNOW SURVEY UNIT, SOIL CONSERVATION SERVICE
DENVER, COLORADO

*Issued by*

ROBERT G. HALSTEAD—STATE CONSERVATIONIST
DENVER, COLORADO

ROGER A. HANSEN—AREA CONSERVATIONIST
LA JUNTA, COLORADO

U.S. DEPARTMENT OF AGRICULTURE – SOIL CONSERVATION SERVICE

D W GILLASPIE - AREA CONSERVATIONIST
ALAMOSA, COLORADO

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April—September

| FORECAST POINT | FORE-CAST | % of Average | Average * |
|---|---|---|---|
| Arkansas River near Pueblo (1) | 100 | 34 | 290 |
| Arkansas River at Salida (1) | 150 | 50 | 313 |
| Cucharas River near La Veta | 8 | 80 | 10 |
| Huerfano River near Redwing | 10 | 67 | 15 |
| Purgatoire River at Trinidad | 23 | 61 | 38 |

*(1) Observed flow plus change in Clear Creek, Twin Lakes and Turquoise Reservoirs minus diversions through Busk Ivanhoe, Boustead, Divide, Twin Lakes and Homestake Tunnels and Ewing, Front Pass, Wurtz and Columbine ditches.*

## WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

| STREAM or AREA | Flow Period | |
|---|---|---|
| | Spring Season | Late Season |
| Apishapa River | Fair | Poor |
| Fountain Creek | Fair | Poor |
| Grape Creek | Fair | Poor |
| Hardscrabble Creek | Fair | Poor |
| Monument Creek | Fair | Poor |

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

| RIVER BASIN and/or SUB-WATERSHED | Number of Courses Averaged | THIS YEAR'S SNOW WATER AS PERCENT OF | |
|---|---|---|---|
| | | Last Year | Average * |
| Arkansas | 10 | 38 | 30 |
| Cucharas | 2 | -- | 44 |
| Purgatoire | 1 | 50 | 8 |

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

| RESERVOIR | Usable Capacity | Usable Storage | | |
|---|---|---|---|---|
| | | This Year | Last Year | Average * |
| Adobe | 62 | 0 | 0 | 16 |
| Clear Creek | 11 | - | 5 | 8 |
| Cucharas | 40 | 0 | 0 | 3 |
| Great Plains | 150 | 0 | 0 | 57 |
| Horse Creek | 27 | 9 | 4 | 7 |
| John Martin | 621 | 9 | 0 | 73 |
| Meredith | 42 | 0 | 0 | 13 |
| Model | 15 | 0 | 0 | 3 |
| Turquoise | 121 | 39 | 42 | -- |
| Twin Lakes | 58 | 7 | 10 | 22 |
| Pueblo | 354 | 54 | 24 | -- |

* 1958-1972 period.

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SNOW SURVEY UNIT
P.O. BOX 17107
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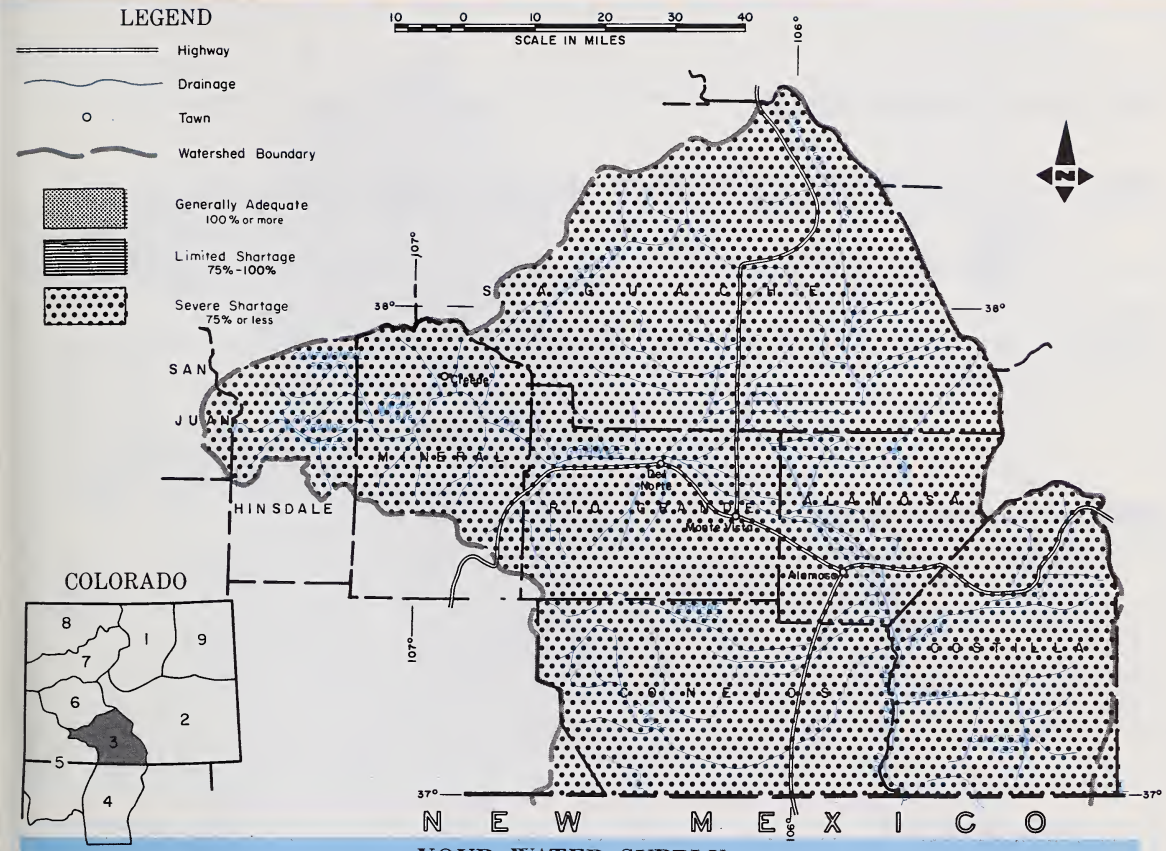
# WATER SUPPLY OUTLOOK
# FOR THE SOIL CONSERVATION DISTRICTS IN THE
# UPPER RIO GRANDE WATERSHED IN COLORADO

**as of**
MAY 1, 1977

**U. S. DEPARTMENT OF AGRICULTURE · SOIL CONSERVATION SERVICE**
**CSU EXPERIMENT STATION, STATE ENGINEERS OF COLORADO AND NEW MEXICO**




## YOUR WATER SUPPLY

SNOWPACK ON THE RIO GRANDE REMAINS AT A RECORD LOW EXCEPT ON THE SANGRE DE CRISTO RANGE. SOME OF THE SNOW COURSES IN THIS BASIN ARE APPROACHING NORMAL. STREAMFLOW FORECASTS ARE NEAR A RECORD LOW. WATER IN THE SAN LUIS VALLEY WILL BE EXTREMELY SHORT. CARRYOVER STORAGE IS LESS THAN NORMAL.


*This report prepared by*

JACK N. WASHICHEK—BERNARD A. SHAFER
SNOW SURVEY UNIT, SOIL CONSERVATION SERVICE
DENVER, COLORADO

*Issued by*

ROBERT G. HALSTEAD—STATE CONSERVATIONIST
DENVER, COLORADO

D. W. GILLASPIE—AREA CONSERVATIONIST
ALAMOSA, COLORADO

U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April—September

| FORECAST POINT | FORE-CAST | % of Average | * Average |
|---|---|---|---|
| Alamosa Creek above Terrace Reservoir | 27 | 44 | 62 |
| Conejos River near Mogote (1) | 85 | 46 | 184 |
| Culebra Creek at San Luis (2) | 13 | 75 | 17 |
| Rio Grande at 30 Mile Bridge (3) | 65 | 54 | 121 |
| Rio Grande near Del Norte (3) | 230 | 49 | 468 |
| South Fork of Rio Grande at South Fork | 53 | 46 | 115 |

*(1) Observed flow plus change in storage in Platoro Reservoir. (2) Observed flow plus change in storage in Sanchez Reservoir. (3) Observed flow plus change in storage in Santa Maria, Rio Grande and Continental Reservoirs.*

## WATER SUPPLY OUTLOOK Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

| STREAM or AREA | Flow Period | |
|---|---|---|
| | Spring Season | Late Season |
| Saguache Creek | Poor | Poor |
| Sangre de Cristo Cr. | Fair | Poor |
| Trinchera Creek | Poor | Poor |

## SUMMARY of SNOW MEASUREMENTS
(COMPARISON WITH PREVIOUS YEARS)

| RIVER BASIN and/or SUB-WATERSHED | Number of Courses Averaged | THIS YEAR'S SNOW WATER AS PERCENT OF | |
|---|---|---|---|
| | | Last Year | Average * |
| Alamosa | -- | -- | -- |
| Conejos | 3 | 3 | 4 |
| Culebra | 2 | 40 | 85 |
| Rio Grande | 10 | 19 | 23 |

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

| RESERVOIR | Usable Capacity | Usable Storage | | |
|---|---|---|---|---|
| | | This Year | Last Year | Average * |
| Continental | 27 | 3 | 6 | 7 |
| Platoro | 60 | 13 | 14 | 10 |
| Rio Grande | 46 | 5 | 20 | 20 |
| Sanchez | 103 | 5 | 7 | 15 |
| Santa Maria | 45 | 8 | 10 | 8 |
| Terrace | 18 | 4 | -- | 7 |

* 1958-1972 period.

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P.O. BOX 17107
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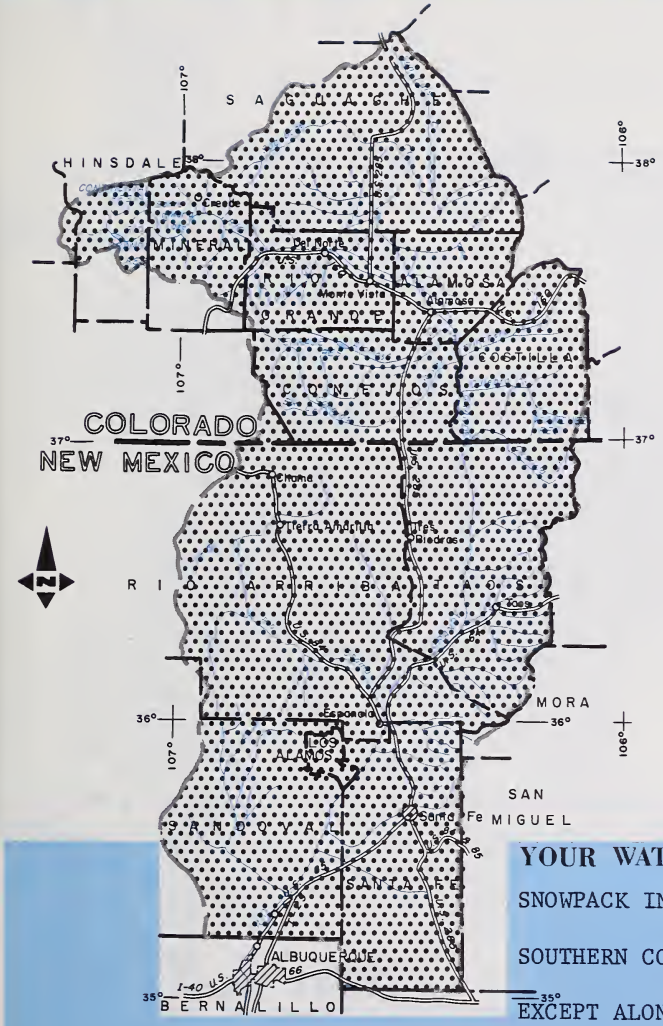
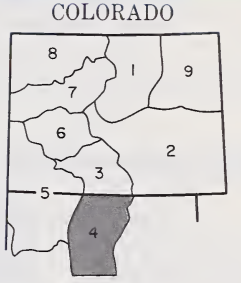
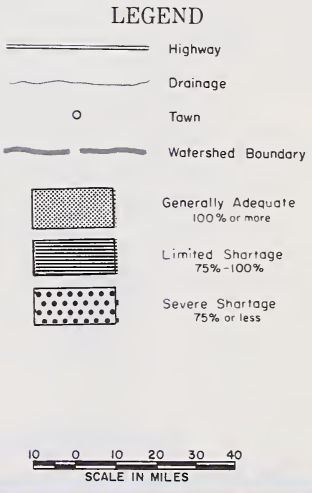
# WATER SUPPLY OUTLOOK
## FOR THE SOIL CONSERVATION DISTRICTS IN THE
# RIO GRANDE WATERSHED IN NEW MEXICO
## as of
## MAY 1, 1977

**U. S. DEPARTMENT OF AGRICULTURE · SOIL CONSERVATION SERVICE**
**CSU EXPERIMENT STATION, STATE ENGINEERS OF COLORADO AND NEW MEXICO**




## YOUR WATER SUPPLY

SNOWPACK IN NORTHERN NEW MEXICO AND SOUTHERN COLORADO REMAINS EXTREMELY LOW EXCEPT ALONG THE SANGRE DE CRISTO RANGE. WATER-PRODUCING AREAS OF THE RIO GRANDE HAVE POOR SNOW. STREAMFLOW FORECASTS REMAIN LOW, SOME NEAR THE MINIMUM OF RECORD. CARRYOVER STORAGE IS 85% OF NORMAL. THERE IS PRACTICALLY NO CHANCE TO INCREASE THE SNOWPACK.


*This report prepared by*

JACK N. WASHICHEK—BERNARD A. SHAFER
SNOW SURVEY UNIT, SOIL CONSERVATION SERVICE
DENVER, COLORADO

*Issued by*

A. W. HAMELSTROM—STATE CONSERVATIONIST
ALBUQUERQUE, NEW MEXICO

JAMES E. TATUM—AREA CONSERVATIONIST
SANTA FE, NEW MEXICO

U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE

## STREAMFLOW FORECASTS (1000 Ac. Ft.) March—July

| FORECAST POINT | FORE-CAST | % of Average | Average * |
|---|---|---|---|
| Costilla Creek at Costilla (1) | 10 | 53 | 19 |
| Jemez River near Jemez | 16 | 55 | 29 |
| Pecos River at Pecos | 35 | 85 | 41 |
| Red River at Mouth near Questa | 21 | 71 | 29 |
| Rio Chama at El Vado | 74 | 39 | 190 |
| Rio Grande at Otowi (2) | 215 | 41 | 526 |
| Rio Grande at San Marcial (2) | 148 | 41 | 355 |
| Rio Hondo near Valdez | 6 | 43 | 14 |
| Santa Cruz River at Cundiyo | 8 | 62 | 13 |

*(1) Observed flow plus change in Costilla Reservoir. (2) Observed flow plus change in storage in El Vado and Abiquiu Reservoir.*

## WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

| STREAM or AREA | Flow Period | |
|---|---|---|
| | Spring Season | Late Season |
| Embudo Creek | Fair | Poor |
| Mora River | Fair | Poor |
| Nambe Creek | Fair | Poor |
| Rio Ojo Caliante | Poor | Poor |
| Rio Pueblo de Taos | Fair | Poor |
| Santa Fe Creek | Fair | Poor |

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

| RESERVOIR | Usable Capacity | Usable Storage | | |
|---|---|---|---|---|
| | | This Year | Last Year | Average * |
| Avalon | 5 | 1 | 1 | -- |
| Caballo | 344 | 48 | 58 | 83 |
| Conchas | 273 | 84 | 81 | 175 |
| El Vado | 195 | 127 | 157 | 28 |
| Elephant Butte | 2195 | 352 | 576 | 380 |
| McMillan | 34 | 9 | 9 | -- |
| Sumner | 111 | 5 | 5 | 62 |

* 1958-1972 period.

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P.O. BOX 17107
DENVER, COLORADO 80217





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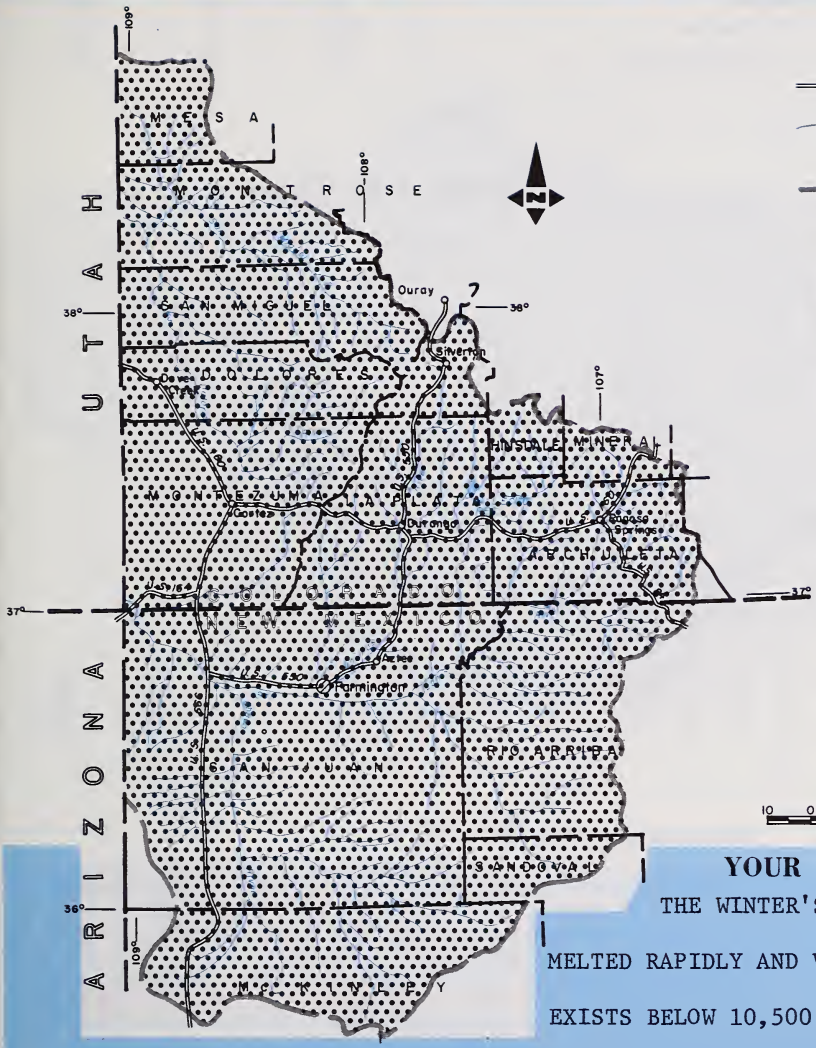
# WATER SUPPLY OUTLOOK
## FOR THE SOIL CONSERVATION DISTRICTS IN THE
# SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN WATERSHEDS IN COLORADO AND NEW MEXICO

as of
MAY 1, 1977

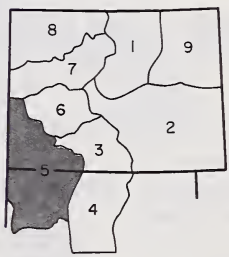
**U. S. DEPARTMENT OF AGRICULTURE · SOIL CONSERVATION SERVICE**
**CSU EXPERIMENT STATION, STATE ENGINEERS OF COLORADO AND NEW MEXICO**




LEGEND

- Highway
- Drainage
- Town
- Watershed Boundary
- Generally Adequate 100% or more
- Limited Shortage 75%-100%
- Severe Shortage 75% or less

COLORADO




10 0 10 20 30 40
SCALE IN MILES

## YOUR WATER SUPPLY

THE WINTER'S POOR SNOWPACK HAS MELTED RAPIDLY AND VERY LITTLE SNOW EXISTS BELOW 10,500 FEET. SNOWCOVER IS NOW LESS THAN 20% OF NORMAL. ALL STREAMS ARE EXPECTED TO FLOW AT OR BELOW THEIR PREVIOUS MINIMUM OF RECORD. SEVERE SHORTAGES ARE FORECAST AND CONSERVATION IS IMPERATIVE.


*This report prepared by*

JACK N. WASHICHEK—BERNARD A. SHAFER
SNOW SURVEY UNIT, SOIL CONSERVATION SERVICE
DENVER, COLORADO

*Issued by*

ROBERT G. HALSTEAD—STATE CONSERVATIONIST
DENVER, COLORADO

A. W. HAMELSTROM—STATE CONSERVATIONIST
ALBUQUERQUE NEW MEXICO

U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE

D. W. GILLASPIE—AREA CONSERVATIONIST
ALAMOSA, COLORADO

JAMES E. TATUM—AREA CONSERVATIONIST
SANTA FE, NEW MEXICO

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April—September

| FORECAST POINT | FORE-CAST | % of Average | Average * |
|---|---|---|---|
| Animas River at Durango | 165 | 39 | 423 |
| Dolores River at Dolores | 81 | 35 | 232 |
| La Plata River at Hesperus | 7 | 31 | 24 |
| Los Pinos River at Bayfield (1) | 85 | 43 | 198 |
| Mancos River near Towac (3) | 5 | 36 | 14 |
| Inflow to Navajo River (1 & 2) | 191 | 32 | 597 |
| Piedra Creek at Arboles | 70 | 38 | 185 |
| San Juan River at Carracas | 125 | 35 | 354 |
| San Miguel River at Placerville | 65 | 50 | 130 |

*(1) Observed flow plus change in storage in Vallicito Reservoir.* (2) April – July (3) March-July

## WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

| STREAM or AREA | Flow Period | |
|---|---|---|
| | Spring Season | Late Season |
| Florida River | Poor | Poor |
| Hermosa Creek | Poor | Poor |
| West Dolores River | Poor | Poor |
| Williams Creek | Poor | Poor |

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

| RESERVOIR | Usable Capacity | Usable Storage | | |
|---|---|---|---|---|
| | | This Year | Last Year | Average* |
| Groundhog | 22 | 4 | 12 | 12 |
| Jackson Gulch | 10 | 0 | 8 | 7 |
| Lemon | 40 | 22 | 25 | 25 |
| Navajo | 1696 | 1090 | 1120 | 944 |
| Vallecito | 126 | 50 | 74 | 68 |

* 1958-1972 period.

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

| RIVER BASIN and/or SUB-WATERSHED | Number of Courses Averaged | THIS YEAR'S SNOW WATER AS PERCENT OF | |
|---|---|---|---|
| | | Last Year | Average * |
| Animas | 6 | 17 | 17 |
| Dolores | 4 | 17 | 13 |
| San Juan | 4 | 15 | 20 |

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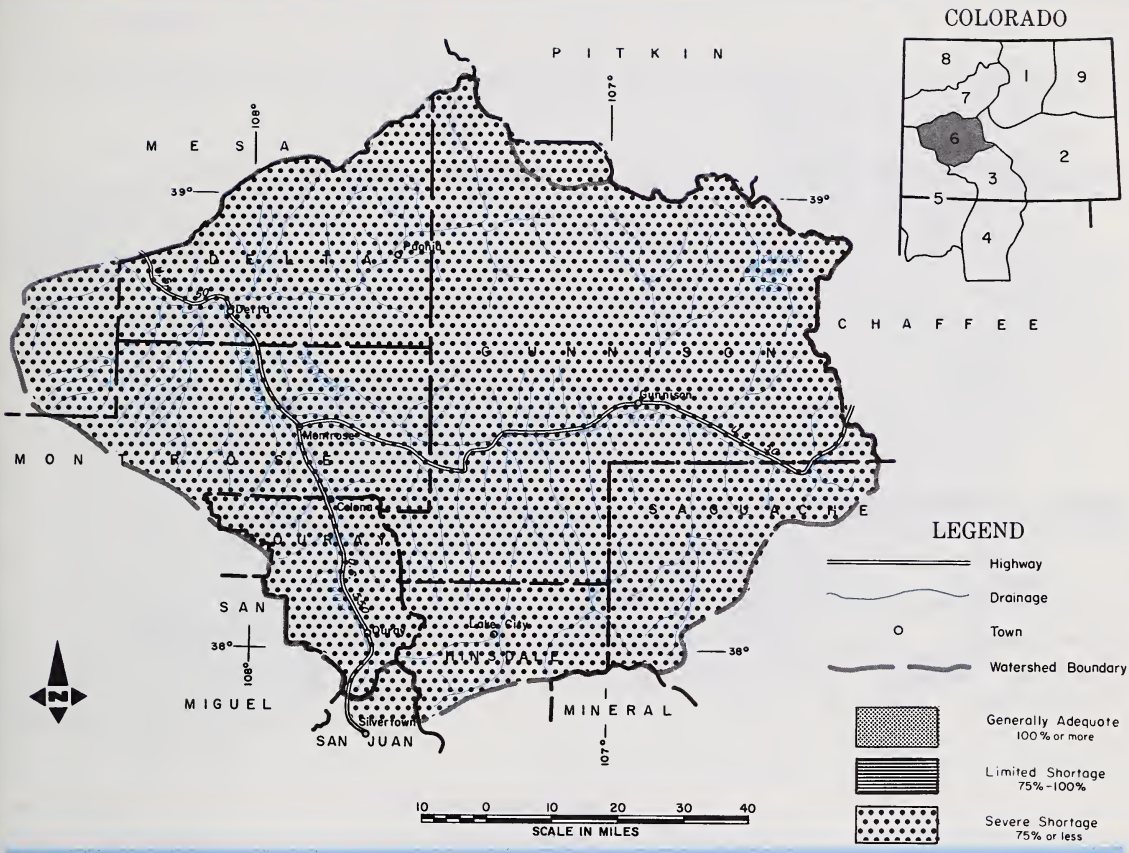
# WATER SUPPLY OUTLOOK
# FOR THE SOIL CONSERVATION DISTRICTS IN THE
# GUNNISON RIVER WATERSHED IN COLORADO
## as of
## MAY 1, 1977

**U. S. DEPARTMENT OF AGRICULTURE · SOIL CONSERVATION SERVICE**
**CSU EXPERIMENT STATION, STATE ENGINEERS OF COLORADO AND NEW MEXICO**




## YOUR WATER SUPPLY

AN EXTREMELY SHORT WATER SUPPLY IS FORECAST. ALL STREAMS ARE EXPECTED TO BE BELOW THEIR PREVIOUS MINIMUMS. THE SNOWPACK HAS MELTED BELOW 10,500 FEET WHICH IS MOST UNUSUAL FOR THIS TIME OF YEAR. IT IS AS MUCH AS 90% BELOW NORMAL ON SOME DRAINAGES. SOIL MOISTURE IS FAIR AND CARRYOVER STORAGE IS NEAR AVERAGE WHICH WILL PROVIDE SOME MINIMAL RELIEF.


*This report prepared by*

JACK N. WASHICHEK—BERNARD A. SHAFER
SNOW SURVEY UNIT, SOIL CONSERVATION SERVICE
DENVER, COLORADO

*Issued by*

ROBERT G. HALSTEAD—STATE CONSERVATIONIST
DENVER, COLORADO

DEAN F. FISHER—AREA CONSERVATIONIST
GRAND JUNCTION, COLORADO

U.S. DEPARTMENT OF AGRICULTURE – SOIL CONSERVATION SERVICE

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April—September

| FORECAST POINT | FORE-CAST | % of Average | Average * |
|---|---|---|---|
| Gunnison River inflow to Blue Mesa Reservoir (1) | 310 | 39 | 793 |
| Gunnison River near Grand Junction (2) | 400 | 34 | 1184 |
| North Fork of Gunnison (3) | 110 | 42 | 263 |
| Surface Creek near Cedaredge | 8 | 50 | 16 |
| Uncompahgre River at Colona | 51 | 38 | 134 |

*(1) Observed flow plus change in storage in Taylor Reservoir. (2) Observed flow plus change in storage in Blue Mesa, Morrow Point and Taylor Reservoirs. (3) Observed flow plus change in storage in Paonia Reservoir.*

## WATER SUPPLY OUTLOOK Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

| STREAM or AREA | Flow Period | |
|---|---|---|
| | Spring Season | Late Season |
| Ohio Creek | Poor | Poor |
| Slate River | Poor | Poor |
| Taylor River | Poor | Poor |
| Tomichi Creek | Poor | Poor |

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

| RIVER BASIN and/or SUB-WATERSHED | Number of Courses Averaged | THIS YEAR'S SNOW WATER AS PERCENT OF | |
|---|---|---|---|
| | | Last Year | Average * |
| Gunnison | 12 | 15 | 14 |
| Surface Creek | 3 | 9 | 10 |
| Uncompahgre | 3 | 31 | 32 |

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

| RESERVOIR | Usable Capacity | Usable Storage | | |
|---|---|---|---|---|
| | | This Year | Last Year | Average * |
| Blue Mesa | 830 | 360 | 431 | 308 |
| Morrow Point | 121 | 113 | 116 | 115 |
| Taylor | 106 | 58 | 57 | 62 |

* 1958-1972 period.

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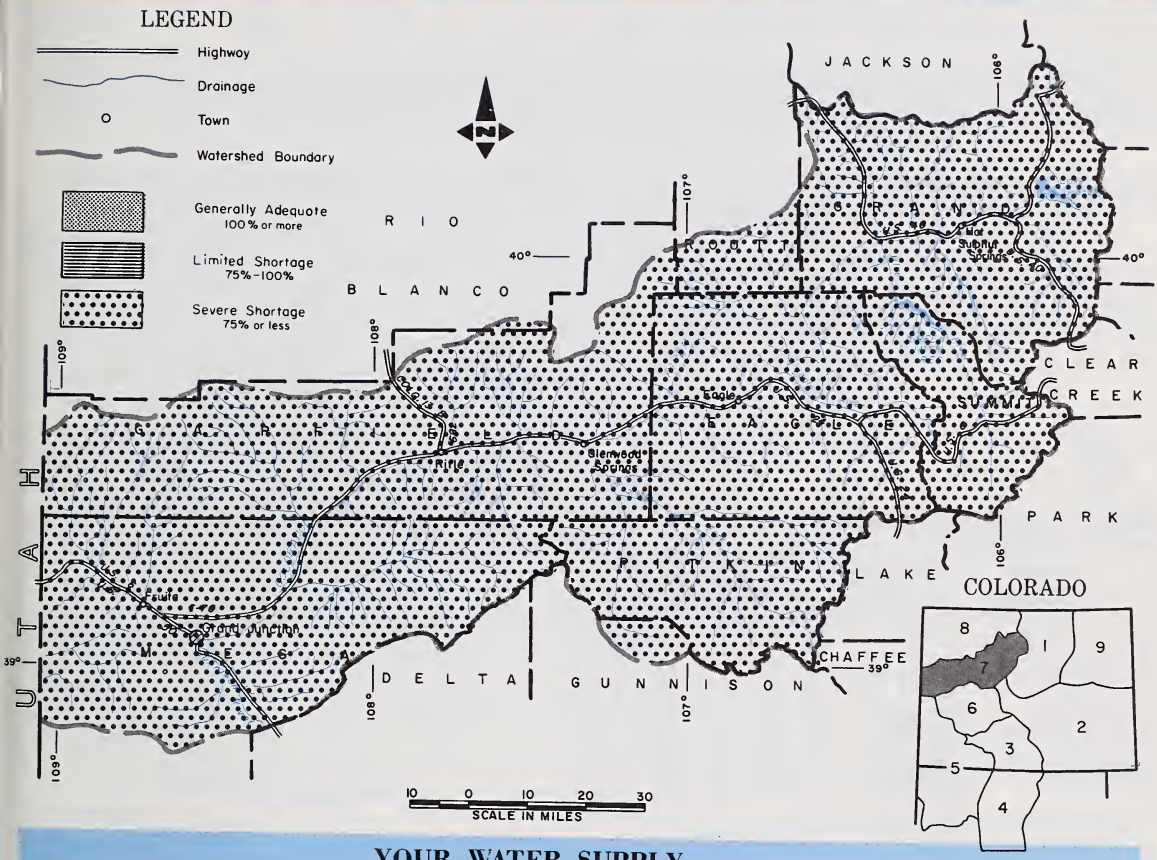
# WATER SUPPLY OUTLOOK
# FOR THE SOIL CONSERVATION DISTRICTS IN THE
# COLORADO RIVER WATERSHED IN COLORADO
as of
MAY 1, 1977

**U. S. DEPARTMENT OF AGRICULTURE · SOIL CONSERVATION SERVICE**
**CSU EXPERIMENT STATION, STATE ENGINEERS OF COLORADO AND NEW MEXICO**




## YOUR WATER SUPPLY

THE SNOWPACK REMAINED SIMILAR TO APRIL FIRST. BASIN SNOWPACK AVERAGES RUN FROM A VERY LOW 15% OF NORMAL ON PLATEAU CREEK TO A HIGH OF 51% ON THE BLUE. LOW ELEVATION SNOW IS COMPLETELY MELTED. STREAMFLOW FORECASTS ARE STILL NEAR THE MINIMUM OF RECORD. THERE IS PRACTICALLY NO CHANCE THAT THE SNOWPACK WILL INCREASE. WATER SUPPLIES WILL BE CRITICAL.


*This report prepared by*

JACK N. WASHICHEK—BERNARD A. SHAFER
SNOW SURVEY UNIT, SOIL CONSERVATION SERVICE
DENVER, COLORADO

*Issued by*

ROBERT G. HALSTEAD—STATE CONSERVATIONIST
DENVER, COLORADO

DEAN F. FISHER—AREA CONSERVATIONIST
GRAND JUNCTION, COLORADO

U.S. DEPARTMENT OF AGRICULTURE – SOIL CONSERVATION SERVICE

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April—September

| FORECAST POINT | FORE-CAST | % of Average | Average * |
|---|---|---|---|
| Blue River inflow to Dillon Reservoir | 90 | 53 | 169 |
| Blue River inflow to Green Mountain Reservoir (1) | 130 | 54 | 297 |
| Colorado River near Cameo (6) | 1100 | 46 | 2370 |
| Colorado River near Dotsero (3) | 645 | 45 | 1434 |
| Colorado River inflow to Granby Reservoir (2) | 116 | 51 | 228 |
| Roaring Fork at Glenwood Springs (4) | 350 | 49 | 713 |
| Williams Fork near Parshall (5) | 25 | 40 | 63 |
| Willow Creek inflow to Willow Creek Reservoir | 23 | 49 | 47 |

*(1) Observed flow plus diversions through Roberts Tunnel and change in storage in Dillon Reservoir. (2) Observed flow corrected for change in storage in Lake Granby as furnished by U.S.B.R. and diversions by Adams Tunnel and Grand River Ditch. (3) Observed flow plus the changes as indicated in (1), (2) and (5) plus Moffat Ditch and change in Homestake, Williams Fork, Green Mt. and Willow Creek Reservoirs. (4) Observed flow plus diversions through Divide and Twin Lakes Tunnels plus change in storage in Ruedi Reservoir. (5) Observed flow plus diversions through August P. Gumlick Tunnel. (6) Observed flow plus the changes as indicated in (3) and (4).*

## WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

| STREAM or AREA | Flow Period | |
|---|---|---|
| | Spring Season | Late Season |
| Brush | Poor | Poor |
| Eagle River | Poor | Poor |
| Gypsum Creek | Poor | Poor |

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

| RIVER BASIN and/or SUB-WATERSHED | Number of Courses Averaged | THIS YEAR'S SNOW WATER AS PERCENT OF | |
|---|---|---|---|
| | | Last Year | Average * |
| Blue River | 8 | 57 | 51 |
| Colorado | 21 | 43 | 35 |
| Plateau | 3 | 14 | 15 |
| Roaring Fork | 7 | 36 | 38 |
| Williams Fork | 3 | 45 | 34 |
| Willow | 2 | 20 | 19 |

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

| RESERVOIR | Usable Capacity | Usable Storage | | |
|---|---|---|---|---|
| | | This Year | Last Year | Average * |
| Dillon | 254 | 199 | 224 | 229 |
| Granby | 466 | 150 | 275 | 209 |
| Green Mountain | 139 | 72 | 53 | 45 |
| Homestake | 43 | 9 | 0 | 11 |
| Ruedi | 101 | 70 | 55 | 55 |
| Vega | 32 | 8 | 15 | 15 |
| Williams Fork | 97 | 46 | 45 | 29 |
| Willow Creek | 9 | 6 | 7 | 6 |

* 1958-1972 period.

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# WATER SUPPLY OUTLOOK
## FOR THE SOIL CONSERVATION DISTRICTS IN THE
# YAMPA, WHITE, AND NORTH PLATTE RIVER WATERSHEDS IN COLORADO

as of
MAY 1, 1977

**U. S. DEPARTMENT OF AGRICULTURE · SOIL CONSERVATION SERVICE**
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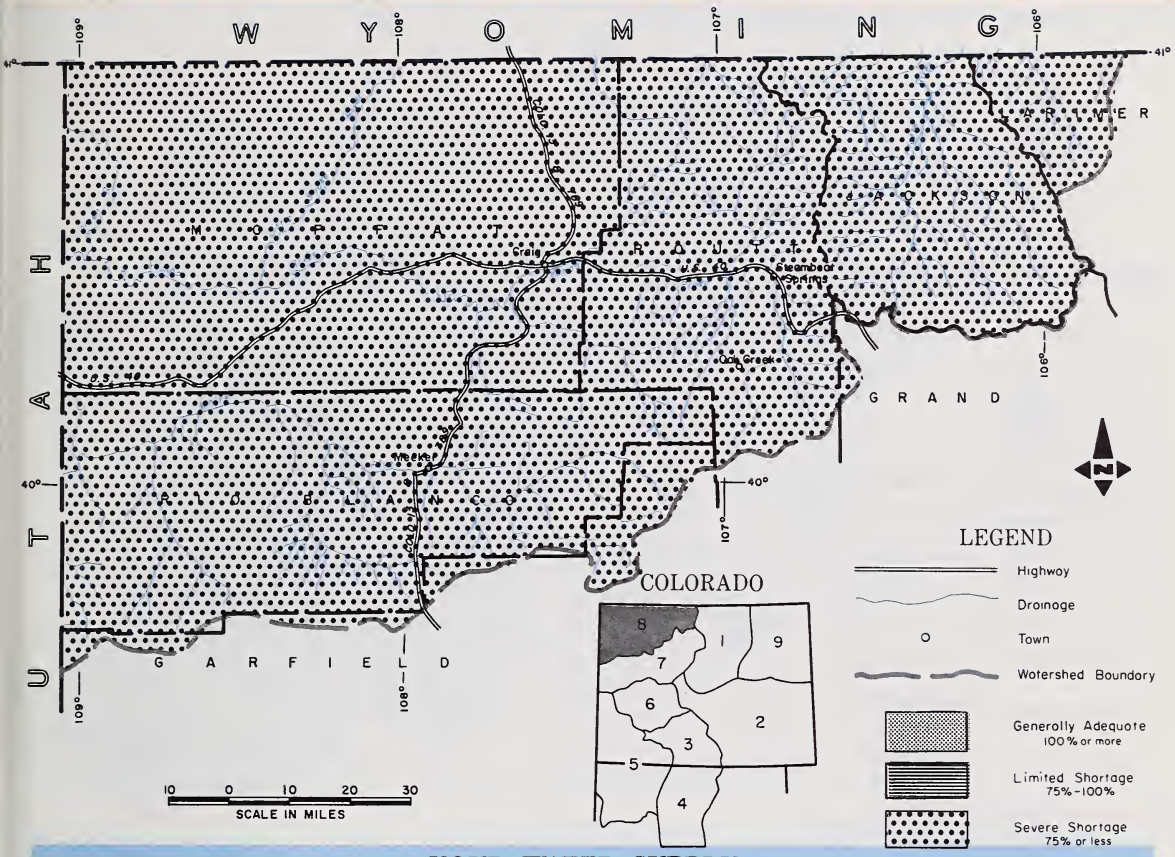


## YOUR WATER SUPPLY

MELTING OF THE SNOWPACK IS PROCEEDING RAPIDLY AND MOST OF THE SNOW IS GONE BELOW 9,500 FEET. THE SNOWPACK IS GENERALLY 60 TO 80% BELOW AVERAGE. PRECIPITATION DURING APRIL IMPROVED SOIL MOISTURE SLIGHTLY. THE OUTLOOK FOR SUMMER WATER SUPPLIES REMAINS EXTREMELY POOR. ASSUMING NORMAL PRECIPITATION FROM NOW ON, FLOWS WILL BE AT OR BELOW MINIMUM OF RECORD. CONSERVATION OF WATER IS IMPERATIVE.


*This report prepared by*

JACK N. WASHICHEK—BERNARD A. SHAFER
SNOW SURVEY UNIT, SOIL CONSERVATION SERVICE
DENVER, COLORADO

*Issued by*

ROBERT G. HALSTEAD—STATE CONSERVATIONIST
DENVER, COLORADO

DEAN F. FISHER—AREA CONSERVATIONIST
GRAND JUNCTION, COLORADO

U.S. DEPARTMENT OF AGRICULTURE – SOIL CONSERVATION SERVICE

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April—September

| FORECAST POINT | FORE-CAST | % of Average | Average * |
|---|---|---|---|
| Elk River at Clark | 115 | 58 | 198 |
| Laramie River near Woods | 56 | 44 | 127 |
| Little Snake River at Lily | 135 | 42 | 324 |
| North Platte River at Northgate | 144 | 60 | 240 |
| White River near Meeker | 145 | 49 | 295 |
| Yampa River near Maybell | 400 | 44 | 905 |
| Yampa River at Steamboat Springs | 125 | 46 | 274 |

## WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

| STREAM or AREA | Flow Period | |
|---|---|---|
| | Spring Season | Late Season |
| Canadian River | Poor | Poor |
| Hunt Creek | Poor | Poor |
| Illinois River | Poor | Poor |
| Michigan River | Poor | Poor |
| Oak Creek | Poor | Poor |
| Trout Creek | Poor | Poor |

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

| RIVER BASIN and/or SUB-WATERSHED | Number of Courses Averaged | THIS YEAR'S SNOW WATER AS PERCENT OF | |
|---|---|---|---|
| | | Last Year | Average * |
| Elk | 2 | 16 | 15 |
| Laramie | 3 | 61 | 68 |
| North Platte | 5 | 43 | 41 |
| White | 2 | 13 | 14 |
| Yampa | 6 | 24 | 20 |

* 1958-1972 period.

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# WATER SUPPLY OUTLOOK
## FOR THE SOIL CONSERVATION DISTRICTS IN THE
# LOWER SOUTH PLATTE RIVER WATERSHED IN COLORADO

as of

MAY 1, 1977

**U. S. DEPARTMENT OF AGRICULTURE · SOIL CONSERVATION SERVICE**
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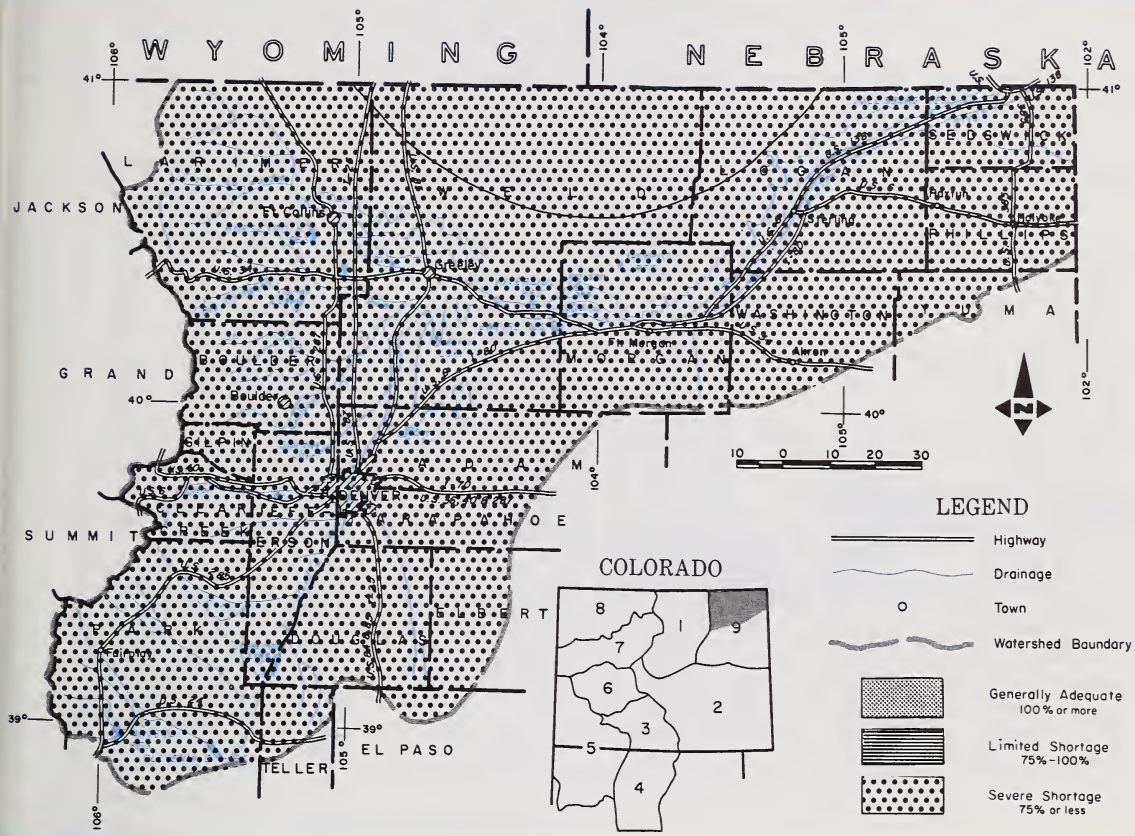


## YOUR WATER SUPPLY

PROSPECTS FOR SUMMER WATER SUPPLIES WERE SLIGHTLY IMPROVED DURING APRIL. SEVERAL STORMS INCREASED THE SNOWPACK. CARRYOVER STORAGE IS GOOD, HOWEVER, WATER USERS DEPENDENT UPON DIRECT FLOWS WILL HAVE VERY SHORT SUPPLIES. FORECASTS ARE BASED ON NORMAL PRECIPITATION FOR THE REMAINDER OF THE YEAR. THERE IS PRACTICALLY NO CHANCE TO INCREASE THE SNOWPACK. SPRING AND SUMMER RAINFALL WILL HAVE TO BE GOOD AND TIMELY TO PROVIDE NECESSARY WATER.


*This report prepared by*

JACK N. WASHICHEK—BERNARD A. SHAFER
SNOW SURVEY UNIT, SOIL CONSERVATION SERVICE
DENVER, COLORADO

*Issued by*

ROBERT G. HALSTEAD—STATE CONSERVATIONIST
DENVER, COLORADO

RODNEY M. ALT—AREA CONSERVATIONIST
GREELEY, COLORADO

U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April—September

| FORECAST POINT | FORE-CAST | % of Average | Average* |
|---|---|---|---|
| Big Thompson River at Drake (1) | 45 | 42 | 107 |
| Boulder Creek at Orodell | 23 | 47 | 49 |
| Cache La Poudre River at Canyon Mouth (2) | 110 | 45 | 247 |
| Clear Creek at Golden (3) | 55 | 43 | 127 |
| Saint Vrain Creek at Lyons | 30 | 40 | 75 |

*(1) Observed flow plus by–pass to power plants. (2) Observed flow minus trans–basin diversions plus municipal and irrigation diversions. (3) Observed flow minus diversion through August P. Gumlick Tunnel.*

## WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

| STREAM or AREA | Flow Period | |
|---|---|---|
| | Spring Season | Late Season |
| South Platte from Greeley to Fort Morgan | Poor | Poor |
| South Platte from Fort Morgan to Sterling | Poor | Poor |
| South Platte below Sterling | Poor | Poor |

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

| RIVER BASIN and/or SUB-WATERSHED | Number of Courses Averaged | THIS YEAR'S SNOW WATER AS PERCENT OF | |
|---|---|---|---|
| | | Last Year | Average* |
| Big Thompson | 5 | 38 | 31 |
| Boulder | 3 | 51 | 42 |
| Cache La Poudre | 7 | 44 | 44 |
| Clear Creek | 6 | 70 | 60 |
| Saint Vrain | 3 | 23 | 20 |
| South Platte | 3 | 55 | 49 |

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

| RESERVOIR | Usable Capacity | Usable Storage | | |
|---|---|---|---|---|
| | | This Year | Last Year | Average* |
| Carter | 109 | 106 | 106 | 99 |
| Cheesman | 79 | 34 | 43 | 60 |
| Eleven Mile | 98 | 90 | 98 | 89 |
| Empire | 38 | 35 | 35 | 33 |
| Horsetooth | 144 | 99 | 126 | 121 |
| Jackson | 35 | 34 | 32 | 33 |
| Julesburg | 28 | 24 | 24 | 23 |
| Point of Rocks | 70 | 72 | 72 | 66 |
| Prewitt | 33 | 27 | 27 | 23 |
| Riverside | 58 | 62 | 58 | 58 |

* 1958-1972 period.

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# APPENDIX I

## SNOW COURSE MEASUREMENTS as of MAY 1, 1977

| SNOW COURSE | CURRENT INFORMATION: DATE OF SURVEY | CURRENT INFORMATION: SNOW DEPTH (INCHES) | CURRENT INFORMATION: WATER CONTENT (INCHES) | PAST RECORD: WATER CONTENT (INCHES): LAST YEAR | PAST RECORD: WATER CONTENT (INCHES): AVG. 58-72 |
|---|---|---|---|---|---|
| NORTH PLATTE BASIN | | | | | |
| Laramie River | | | | | |
| Deadman Hill | 4/29 | 25 | 8.6 | 16.1 | 18.0 |
| McIntyre | 4/26 | 12 | 4.2 | 11.3 | 10.1 |
| Roach | 4/26 | 38 | 12.2 | 23.4 | 18.5 |
| North Platte River | | | | | |
| Cameron Pass | 4/29 | 47 | 22.3 | 37.0 | 31.2 |
| Columbine Lodge | 4/29 | 10 | 4.0 | 14.2 | 22.0 |
| Northgate | 4/28 | 1 | 0.2 | 3.4 | 3.7 |
| Park View | 4/28 | 4 | 1.1 | 6.4 | 6.5 |
| Willow Cr. Pass (B) | 4/28 | 9 | 2.9 | 10.5 | 11.0 |
| SOUTH PLATTE BASIN | | | | | |
| Boulder Creek | | | | | |
| Baltimore | 4/28 | 5 | 1.8 | 2.5 | 3.9 |
| Boulder Falls | 4/28 | 20 | 5.0 | 11.3 | 13.1 |
| University Camp | 4/28 | 29 | 8.8 | 16.9 | 19.9 |
| Big Thompson River | | | | | |
| Deer Ridge | 4/30 | 0 | 0.0 | 0.2 | 2.7 |
| Hidden Valley | 4/30 | 0 | 0.0 | 9.4 | 11.6 |
| Lake Irene (B) | 4/29 | 35 | 11.5 | 19.1 | 22.9 |
| Long's Peak | 4/29 | 12 | 4.4 | 11.4 | 12.5 |
| Two Mile | 4/30 | 20 | 5.0 | 14.8 | 17.9 |
| Cache La Poudre | | | | | |
| Bennett Creek | 4/28 | 0 | 0.0 | 3.9 | --- |
| Big South | 4/28 | 0 | 0.0 | 0.0 | 0.6 |
| Cameron Pass | 4/29 | 47 | 22.3 | 37.0 | 31.2 |
| Chambers Lake | 4/28 | 0 | 0.0 | 4.4 | 6.0 |
| Deadman Hill | 4/29 | 25 | 8.6 | 16.1 | 18.0 |
| Hourglass Lake | 4/28 | 4 | 1.2 | 5.2 | 6.0 |
| Joe Wright | 4/29 | 50 | 18.8 | 26.8 | --- |
| Lost Lake | 4/28 | 2 | 0.7 | 9.2 | 9.9 |
| Red Feather | 4/28 | 1 | 0.5 | 4.5 | 5.1 |
| Clear Creek | | | | | |
| Baltimore (B) | 4/28 | 5 | 1.8 | 2.5 | 3.9 |
| Berthoud Falls | 4/28 | 17 | 5.9 | 8.6 | 12.4 |
| Empire | 4/28 | 13 | 4.2 | 7.7 | 6.9 |
| Grizzly Peak (B) | 4/27 | 37 | 12.6 | 17.9 | 20.1 |
| Loveland Lift | 4/27 | 58 | 19.4 | 17.5 | 24.0 |
| Loveland Pass | 4/27 | 25 | 9.3 | 16.1 | 15.0 |
| St. Vrain River | | | | | |
| Copeland Lake | 4/30 | 0 | 0.0 | 1.8 | 2.4 |
| Ward | 4/28 | 4 | 1.4 | 4.8 | 5.6 |
| Wild Basin | 4/30 | 9 | 2.7 | 11.6 | 12.3 |
| South Platte River | | | | | |
| Como | 4/26 | 0 | 0.0 | 4.0 | --- |
| Geneva Park | 4/28 | 0 | 0.0 | 1.4 | 1.9 |
| Horseshoe Mt. | 4/27 | 17 | 5.5 | 9.6 | --- |
| Hoosier Pass | 4/27 | 21 | 7.1 | 11.8 | 12.9 |
| Jefferson Creek | 4/26 | 11 | 4.1 | 7.0 | 8.1 |
| Mosquito | 4/26 | 1 | 0.5 | 3.8 | --- |
| Trout Creek Pass | 4/26 | 0 | 0.0 | 0.0 | --- |
| ARKANSAS BASIN | | | | | |
| Arkansas River | | | | | |
| Bigelow Divide | 4/29 | 8 | 2.6 | 2.0 | 3.6 |
| Cooper Hill (B) | 4/27 | 0 | 0.0 | 11.8 | 12.1 |
| East Fork | 4/28 | 6 | 2.3 | 5.7 | 7.5 |
| Four Mile Park | 4/27 | 0 | 0.0 | 0.4 | 1.4 |
| Fremont Pass | 4/28 | 36 | 12.7 | 17.9 | 18.1 |
| Garfield | 4/29 | 0 | 0.0 | 6.5 | 8.6 |
| Hermit Lake | 4/28 | 0 | 0.0 | 2.7 | --- |
| Monarch Pass | 4/29 | 11 | 5.0 | 10.9 | 16.3 |
| Tennessee Pass | 4/27 | 0 | 0.0 | 4.6 | 8.5 |
| Twin Lakes Tunnel | 4/27 | 11 | 3.6 | 8.6 | 9.4 |
| Westcliffe | 4/28 | 0 | 0.0 | 0.0 | 1.6 |

| SNOW COURSE | CURRENT INFORMATION: DATE OF SURVEY | CURRENT INFORMATION: SNOW DEPTH (INCHES) | CURRENT INFORMATION: WATER CONTENT (INCHES) | PAST RECORD: WATER CONTENT (INCHES): LAST YEAR | PAST RECORD: WATER CONTENT (INCHES): AVG. 58-72 |
|---|---|---|---|---|---|
| Cucharas River | | | | | |
| Apishapa | 4/28 | 6 | 2.4 | 0.0 | 3.3 |
| Cucharas Creek | 4/28 | 13 | 4.5 | 4.7 | --- |
| La Veta Pass (B) | 4/28 | 0 | 0.0 | 0.0 | 2.1 |
| Purgatoire River | | | | | |
| Bourbon | 4/28 | 1 | 0.2 | 0.4 | 2.5 |
| RIO GRANDE BASIN-COLO | | | | | |
| Alamosa River | | | | | |
| Silver Lakes | 4/28 | 0 | 0.0 | 0.0 | 0.7 |
| Conejos River | | | | | |
| Cumbres Pass | 4/28 | 0 | 0.0 | 15.3 | 13.7 |
| La Manga | 4/28 | 13 | 4.7 | 18.6 | --- |
| Platoro | 4/28 | 4 | 1.0 | 16.9 | 10.5 |
| River Springs | 4/26 | 0 | 0.0 | 0.0 | 0.3 |
| Cumbres Trestle | 4/28 | 5 | 1.8 | 18.1 | --- |
| Culebra River | | | | | |
| Brown Cabin | 4/27 | 0 | 0.0 | --- | --- |
| Cottonwood (B) | 4/27 | 0 | 0.0 | --- | --- |
| Culebra | 4/28 | 11 | 3.3 | 8.3 | 3.9 |
| La Veta Pass (B) | 4/28 | 0 | 0.0 | 0.0 | 2.1 |
| Trinchera (B) | 4/27 | 16 | 5.9 | --- | --- |
| Rio Grande | | | | | |
| Cochetopa Pass | 4/26 | 0 | 0.0 | 2.9 | 3.3 |
| Grayback | 4/30 | 11 | 3.0 | 20.2 | --- |
| Hiway | 4/28 | 25 | 8.9 | 31.8 | 25.8 |
| Lake Humphrey | 4/27 | 0 | 0.0 | 1.3 | 0.9 |
| Love Lake | 4/28 | 0 | 0.0 | 6.5 | --- |
| Pass Creek | 4/28 | 0 | 0.0 | 7.1 | 3.5 |
| Pool Table | 4/28 | 0 | 0.0 | 3.3 | 2.4 |
| Porcupine | 4/28 | 0 | 0.0 | 7.2 | 7.4 |
| Santa Maria | 4/28 | 0 | 0.0 | 0.0 | 0.8 |
| Upper Rio Grande | 4/29 | 0 | 0.0 | 3.5 | 2.2 |
| Wolf Creek Pass | 4/28 | 9 | 2.9 | 31.4 | 21.5 |
| Wolf Cr. Summit (B) | 4/28 | 33 | 11.2 | 35.2 | 30.4 |
| RIO GRANDE BASIN-NM | | | | | |
| Chamita | 4/26 | 0 | 0.0 | 0.0 | 0.2 |
| Hopewell | 4/28 | 0 | 0.0 | 9.7 | --- |
| Quemazon | 4/27 | 0 | 0.0 | --- | --- |
| Red River #2 | 4/29 | 0 | 0.0 | --- | --- |
| Bernal Trail | 4/29 | 0 | 0.0 | --- | --- |
| North Costilla | 4/29 | 0 | 0.0 | --- | --- |
| Powderhouse | 4/29 | 0 | 0.0 | --- | --- |
| Rio En Medio | 4/27 | 0 | 0.0 | 0.0 | --- |

NOTE: NS - No Survey
(B) - On Adjacent Drainage

# APPENDIX I

## SNOW COURSE MEASUREMENTS as of MAY 1, 1977

| SNOW COURSE | CURRENT INFORMATION: DATE OF SURVEY | SNOW DEPTH (INCHES) | WATER CONTENT (INCHES) | PAST RECORD: WATER CONTENT (INCHES) LAST YEAR | AVG. 58-72 |
|---|---|---|---|---|---|
| SAN JUAN-DOLORES BASIN | | | | | |
| Animas River | | | | | |
| Cascade | 4/28 | 0 | 0.0 | 0.0 | 4.2 |
| Lemon | 4/28 | 0 | 0.0 | 0.0 | --- |
| Mineral Creek | 4/28 | 0 | 0.0 | 12.6 | 11.6 |
| Molas Lake | 4/28 | 0 | 0.0 | 6.2 | 7.8 |
| Purgatory | 4/28 | 0 | 0.0 | 17.4 | --- |
| Red Mt. Pass (B) | 4/28 | 35 | 13.2 | 35.1 | 32.5 |
| Silverton Sub-Sta. | 4/28 | 0 | 0.0 | 0.0 | 0.3 |
| Spud Mountain | 4/28 | 0 | 0.0 | 25.6 | 21.7 |
| Dolores River | | | | | |
| Lizard Head | 4/26 | 0 | 0.0 | 9.4 | 14.9 |
| Lone Cone | 4/26 | 0 | 0.0 | 12.0 | --- |
| Ophir Loop | 4/28 | 11 | 3.4 | 13.9 | --- |
| Rico | 4/29 | 0 | 0.0 | 0.0 | 0.1 |
| Telluride | 4/27 | 0 | 0.0 | 0.0 | 1.4 |
| Trout Lake | 4/27 | 0 | 0.0 | 11.1 | 9.1 |
| San Juan River | | | | | |
| Chama Divide (B) | 4/28 | 0 | 0.0 | --- | 0.0 |
| Chamita (B) | 4/26 | 0 | 0.0 | 0.0 | 0.2 |
| Upper San Juan | 4/28 | 4 | 1.5 | 31.5 | 25.0 |
| Wolf Cr. Pass (B) | 4/28 | 6 | 2.4 | 31.4 | 21.5 |
| Wolf Cr. Summit | 4/28 | 33 | 11.2 | 35.2 | 30.4 |
| GUNNISON BASIN | | | | | |
| Gunnison River | | | | | |
| Alexander Lake | 4/27 | 9 | 2.8 | 21.1 | 21.9 |
| Blue Mesa | 4/29 | 0 | 0.0 | 0.0 | 1.7 |
| Butte | 4/27 | 13 | 3.9 | 12.6 | --- |
| Cochetopa Pass (B) | 4/26 | 0 | 0.0 | 2.9 | 3.3 |
| Crested Butte | 4/27 | 0 | 0.0 | 1.9 | 7.0 |
| Keystone | 4/27 | 11 | 4.0 | 14.0 | 17.2 |
| Lake City | 4/25 | 0 | 0.0 | 4.8 | 4.2 |
| Mesa Lakes (B) | 4/29 | 2 | 0.6 | 18.0 | 15.8 |
| McClure Pass | 4/28 | 0 | 0.0 | 10.1 | 9.1 |
| Park Cone | 4/26 | 0 | 0.0 | 6.9 | 7.3 |
| Park Reservoir | 4/27 | 8 | 2.6 | 26.7 | 24.0 |
| Porphyry Creek | 4/29 | 19 | 8.2 | 13.4 | 16.5 |
| Tomichi | 4/29 | 4 | 1.6 | 8.2 | 10.3 |
| Surface Creek | | | | | |
| Alexander Lake | 4/27 | 9 | 2.8 | 21.1 | 21.9 |
| Mesa Lakes | 4/29 | 2 | 0.6 | 18.0 | 15.8 |
| Park Reservoir | 4/27 | 8 | 2.6 | 26.7 | 24.0 |
| Uncompahgre River | | | | | |
| Ironton Park | 4/29 | 0 | 0.0 | 8.0 | 7.0 |
| Red Mountain Pass | 4/28 | 35 | 13.2 | 35.1 | 32.5 |
| Telluride (B) | 4/27 | 0 | 0.0 | 0.0 | 1.4 |
| COLORADO BASIN | | | | | |
| Blue River | | | | | |
| Blue River | 4/27 | 4 | 1.8 | 3.8 | 5.9 |
| Fremont Pass | 4/28 | 36 | 12.7 | 17.9 | 18.1 |
| Frisco Pass | 4/27 | 0 | 0.0 | 4.4 | 4.7 |
| Grizzly Peak | 4/27 | 37 | 12.6 | 17.9 | 20.1 |
| Hoosier Pass (B) | 4/27 | 21 | 7.1 | 11.8 | 12.9 |
| Shrine Pass | 4/28 | 33 | 10.5 | 17.9 | 20.0 |
| Snake River | 4/28 | 0 | 0.0 | 1.2 | 3.3 |
| Summit Ranch | 4/27 | 2 | 0.8 | 4.3 | 4.9 |

| SNOW COURSE | CURRENT INFORMATION: DATE OF SURVEY | SNOW DEPTH (INCHES) | WATER CONTENT (INCHES) | PAST RECORD: WATER CONTENT (INCHES) LAST YEAR | AVG. 58-72 |
|---|---|---|---|---|---|
| Colorado River | | | | | |
| Arrow | 4/27 | 15 | 4.6 | 8.8 | 11.1 |
| Berthoud Pass | 4/27 | 28 | 9.9 | 11.6 | 16.0 |
| Berthoud Summit | 4/28 | 43 | 14.7 | 18.9 | 21.1 |
| Cooper Hill | 4/28 | 0 | 0.0 | 11.8 | 12.1 |
| Fiddler Gulch | 4/28 | 0 | 0.0 | 11.9 | 14.5 |
| Glenmar Ranch | 4/27 | 0 | 0.0 | 2.5 | 4.4 |
| Gore Pass | 4/27 | 0 | 0.0 | 4.7 | 7.8 |
| Grand Lake | 4/29 | 2 | 0.8 | 4.5 | 4.0 |
| Lake Irene | 4/29 | 35 | 11.5 | 19.1 | 22.9 |
| Lapland | 4/26 | 9 | 3.0 | 6.3 | 7.3 |
| Lulu | 4/28 | 36 | 11.8 | 19.1 | 20.3 |
| Lynx Pass | 4/27 | 0 | 0.0 | 8.1 | 8.4 |
| McKenzie Gulch | 4/27 | 0 | 0.0 | 0.0 | 1.0 |
| Middle Fork | 4/27 | 2 | 0.9 | 4.6 | 6.2 |
| Milner | 4/29 | 11 | 4.5 | 10.5 | 13.1 |
| North Inlet | 4/29 | 1 | 0.5 | 4.4 | 6.3 |
| Pando | 4/28 | 0 | 0.0 | 6.7 | 8.0 |
| Phantom Valley | 4/29 | 0 | 0.0 | 5.4 | 7.0 |
| Ranch Creek | 4/27 | 9 | 2.7 | 7.3 | 9.4 |
| Tennessee Pass (B) | 4/27 | 0 | 0.0 | 4.6 | 8.5 |
| Vasquez | 4/28 | 22 | 12.8 | 11.4 | 12.8 |
| Roaring Fork | | | | | |
| Aspen | 4/28 | 24 | 8.5 | 23.0 | 17.7 |
| Independence Pass | 4/27 | 23 | 8.0 | 15.1 | 16.8 |
| Ivanhoe | 4/28 | 30 | 8.3 | 20.2 | 17.7 |
| Kiln | 4/28 | 0 | 0.0 | 14.4 | --- |
| Lift | 4/28 | 30 | 9.7 | 19.3 | 19.0 |
| McClure Pass | 4/28 | 0 | 0.0 | 10.1 | 9.1 |
| Nast | 4/28 | 0 | 0.0 | 0.7 | 2.0 |
| North Lost Trail | 4/28 | 0 | 0.0 | 6.9 | 8.3 |
| Williams Fork River | | | | | |
| Glenmar Ranch | 4/27 | 0 | 0.0 | 2.5 | 4.4 |
| Jones Pass | 4/29 | 25 | 8.2 | 13.3 | 15.8 |
| Middle Fork | 4/27 | 2 | 0.9 | 4.6 | 6.2 |
| Willow Creek | | | | | |
| Granby | 4/28 | 0 | 0.0 | 4.1 | 4.0 |
| Willow Cr. Pass | 4/28 | 9 | 2.9 | 10.5 | 11.0 |
| Plateau Creek | | | | | |
| Mesa Lakes | 4/29 | 2 | 0.6 | 18.0 | 15.8 |
| Park Reservoir | 4/27 | 8 | 2.6 | 26.7 | 24.0 |
| Trickle Divide | 4/27 | 18 | 7.0 | 30.3 | 26.9 |
| YAMPA BASIN | | | | | |
| Elk River | | | | | |
| Elk River #2 | 4/27 | 12 | 3.5 | 14.6 | 15.4 |
| Hahn's Peak | 4/27 | 0 | 0.0 | 7.8 | 8.5 |
| White River | | | | | |
| Burro Mountain | 4/27 | 9 | 3.5 | 16.8 | 15.0 |
| Rio Blanco | 4/28 | 0 | 0.0 | 9.5 | 9.8 |
| Yampa River | | | | | |
| Bear River | 4/28 | 0 | 0.0 | 8.0 | 7.5 |
| Columbine (B) | 4/29 | 10 | 3.9 | 14.2 | 22.0 |
| Crosho | 4/28 | 8 | 2.4 | 10.8 | --- |
| Dry Lake | 4/27 | 15 | 5.5 | 15.7 | 16.9 |
| Lynx Pass (B) | 4/27 | 0 | 0.0 | 8.1 | 8.4 |
| Rabbit Ears | 4/29 | 24 | 8.8 | 23.4 | 27.1 |
| Tower | 4/29 | 68 | 29.5 | 46.8 | --- |
| Yampa View | 4/29 | 0 | 0.0 | 7.2 | 9.3 |

NOTE: NS - No Survey
(B) - On Adjacent Drainage

# LIST of COOPERATORS

The following organizations cooperate in snow surveys for the Colorado, Platte, Arkansas and Rio Grande watersheds. Many other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

## STATE

Colorado State Engineer
New Mexico State Engineer
Nebraska State Engineer
Colorado State University Experiment Station
Rocky Mountain Forest and Range Experiment Station

## FEDERAL

Department of Agriculture

- Forest Service
- Soil Conservation Service

Department of Interior

- Bureau of Reclamation
- Geological Survey
- National Park Service
- Indian Service

Department of Commerce

- NOAA, National Weather Service

Defence Department

- Army Engineer Corps

Atomic Energy Commission

## INVESTOR OWNED UTILITIES

Colorado Public Service Company
Public Service Company of New Mexico

## MUNICIPALITIES

City of Denver
City of Boulder
City of Greeley
City of Fort Collins

## WATER USERS ORGANIZATIONS

Arkansas Valley Ditch Association
Colorado River Water Conservation District

## IRRIGATION PROJECTS

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Santa Maria Reservoir Company
Costilla Land Company
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